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None

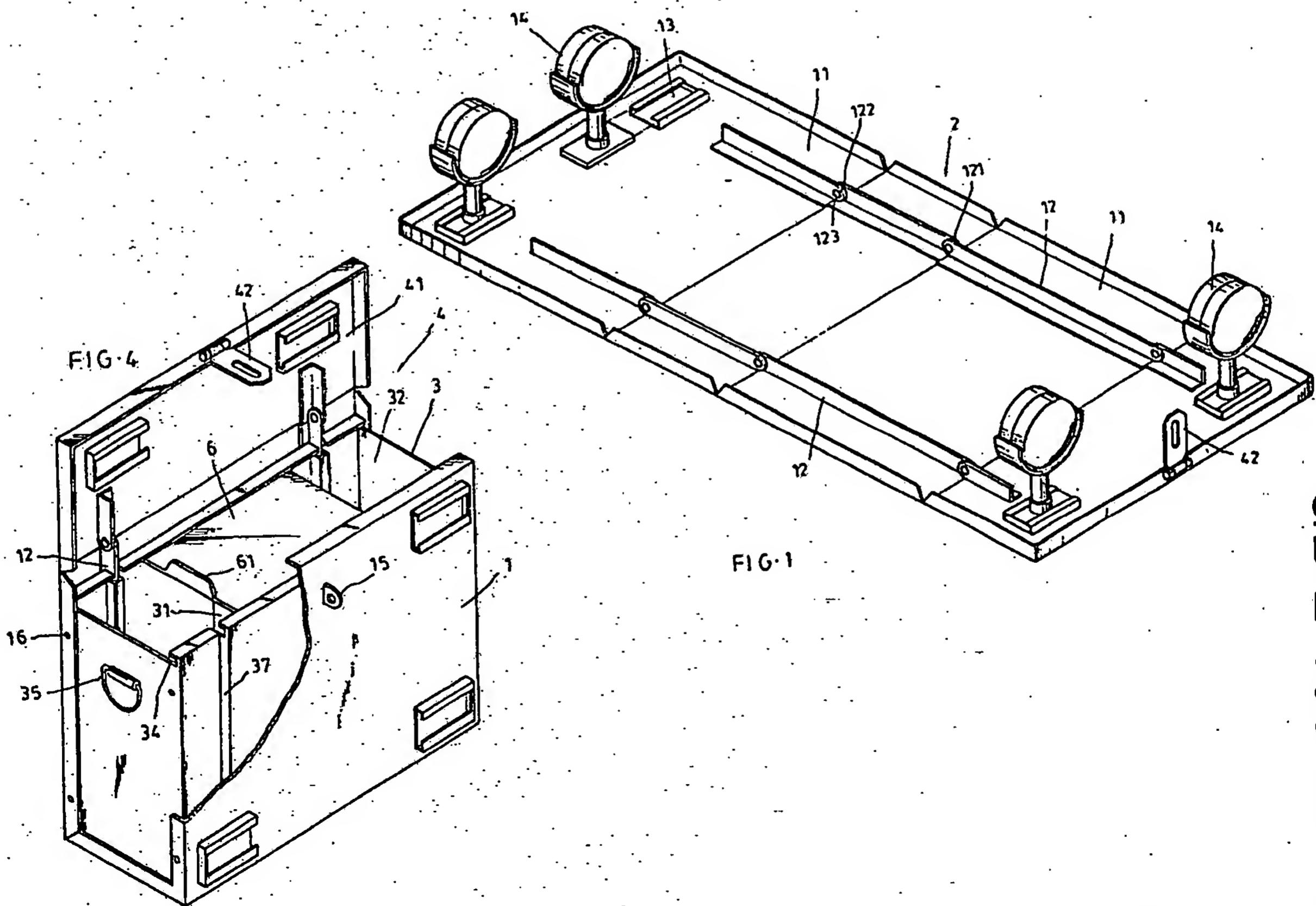
(58) Field of search:

B7R

**B7B**  
**Selected US specifications from IPC sub-classes**  
**B62B B25H.**

**(54) Multi-functional foldable tool box/crawler**

(57) A case body 1 composed of a plurality of rigid plates 11 houses an inner box 3 to contain tools and/or other articles. The rigid plates are connected in series by angle steel 12 members pivoted together so that by spreading of the plates 11 the case body is converted to a crawler for use while working under a vehicle chassis. The folded case body incorporated with the inner box 3, is used as a tool box to hold tools and pillow. Hooks 35 are installed on two opposite sides of the case body 1 for connection of a belt and castors may be installed in T slots on its bottom for movement. Slots 37 on the inner box house the angle steel members 12. In use as a crawler, removable wheels 14 are housed in slots 13, and a pillow is provided for comfort.



Figs 1 & 2 of the drawing(s) originally filed was (were) informal and the print here reproduced is taken from a later filed formal copy.

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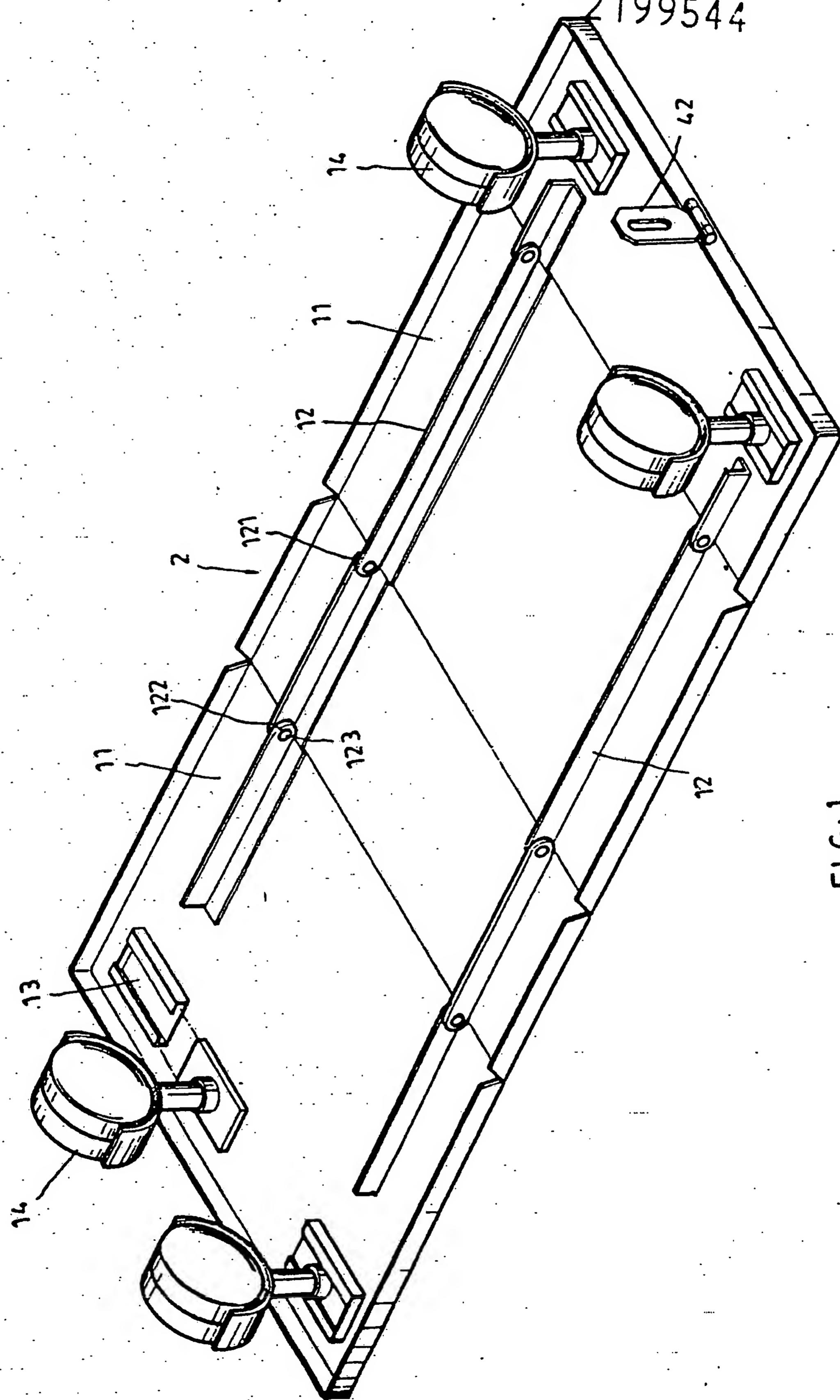


FIG. 1

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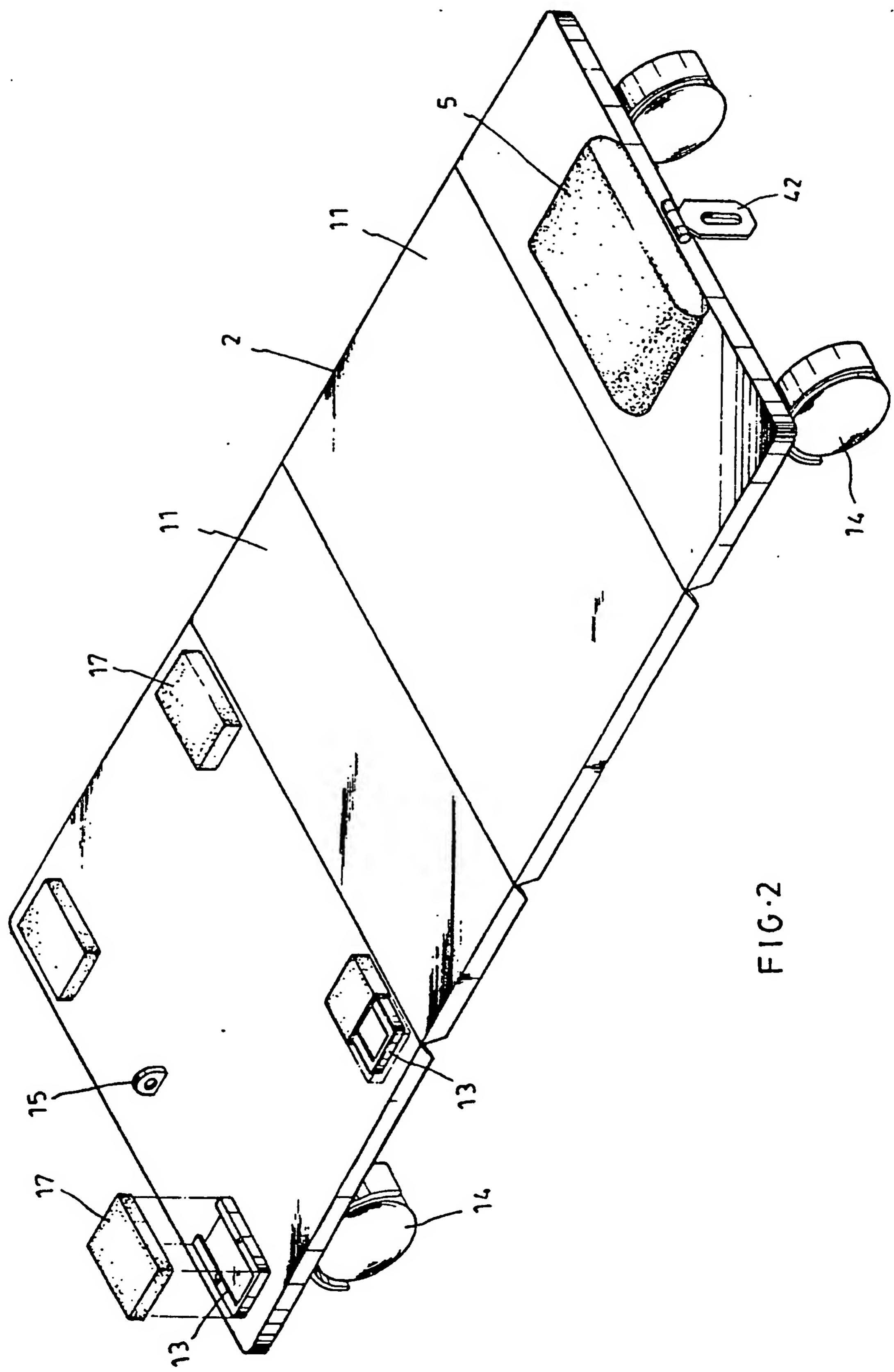


FIG.2

F.C. original

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DFA

3/S

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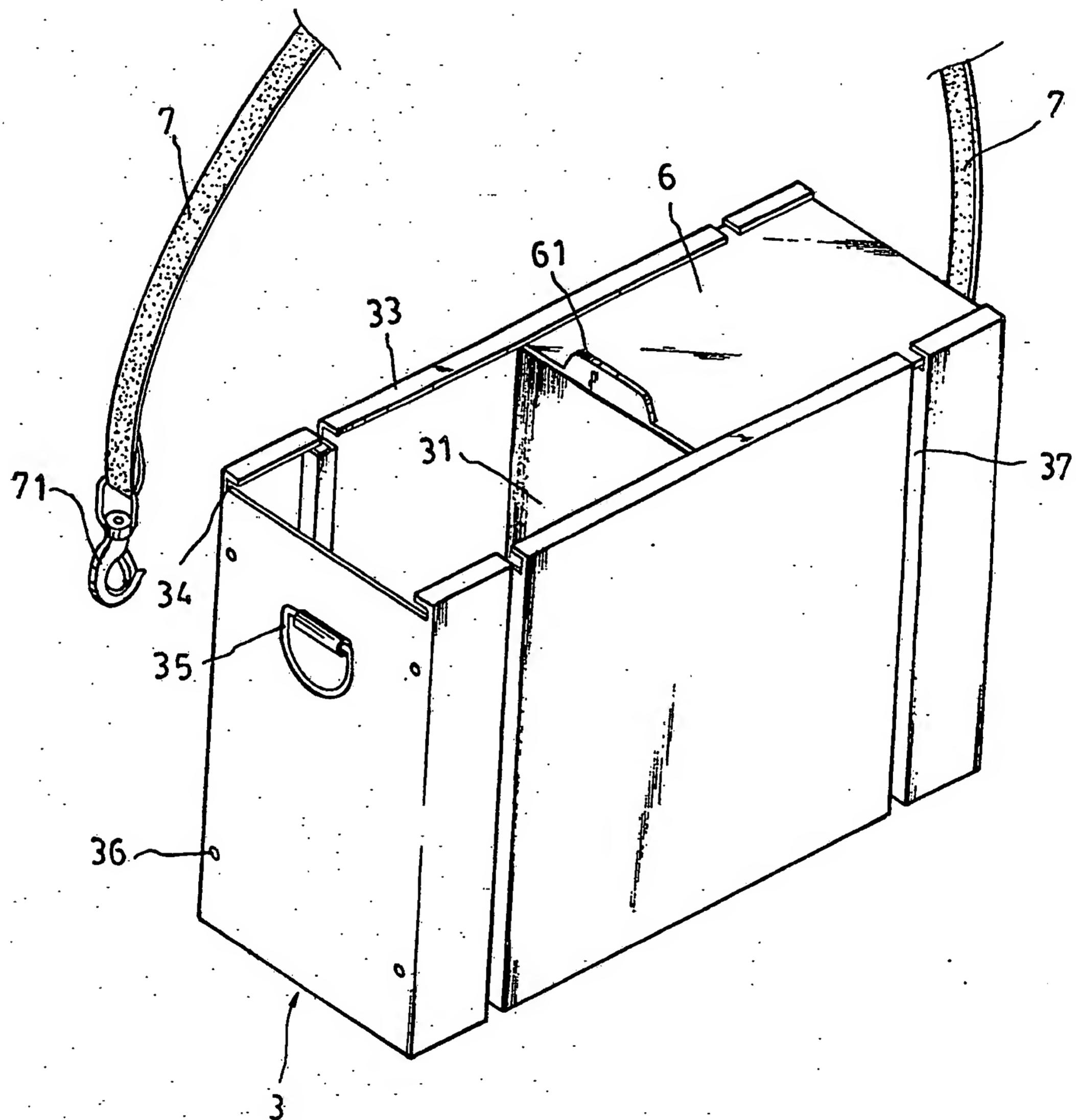


FIG. 3

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D F A

4/S

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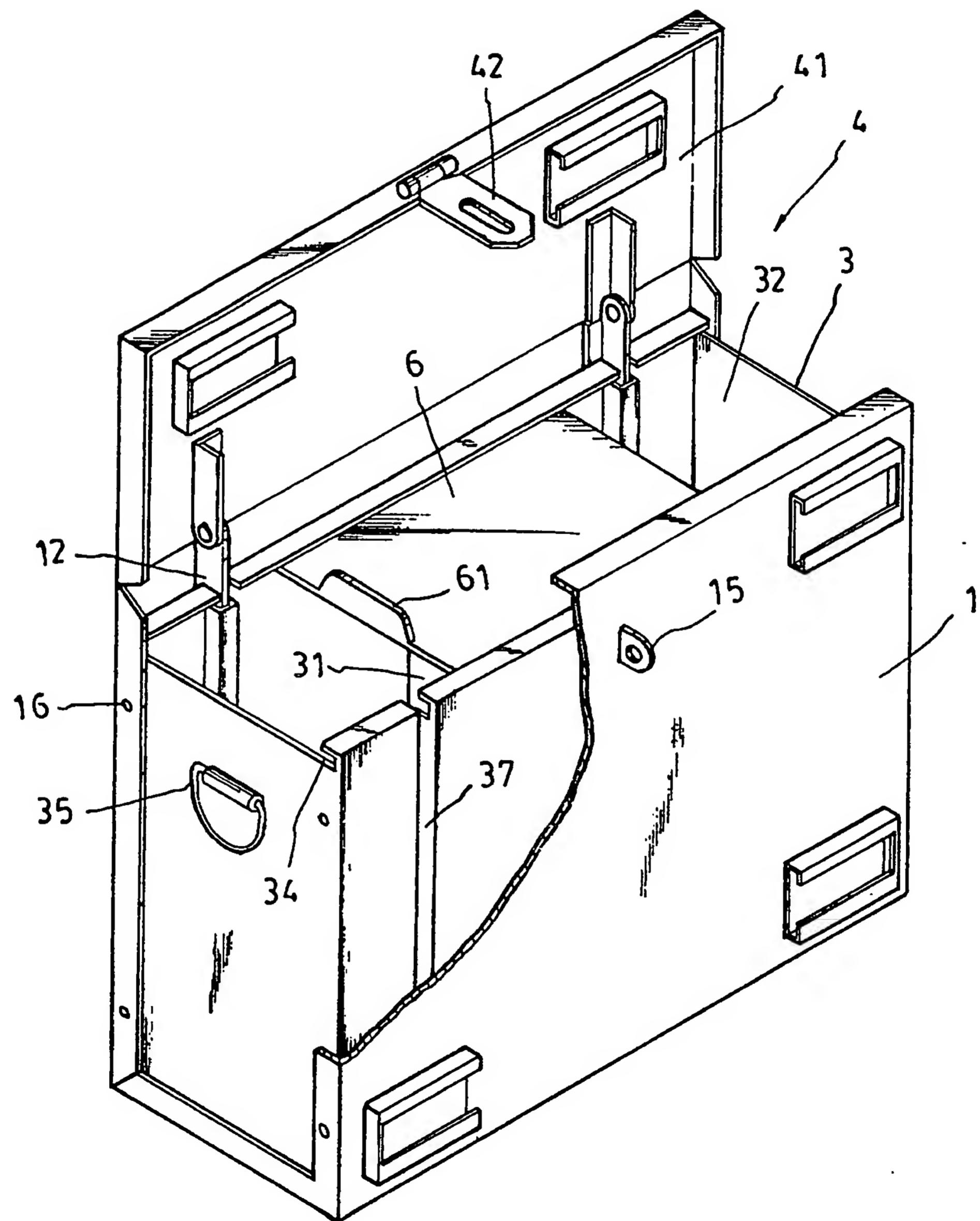


FIG. 4

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DFA

S/S

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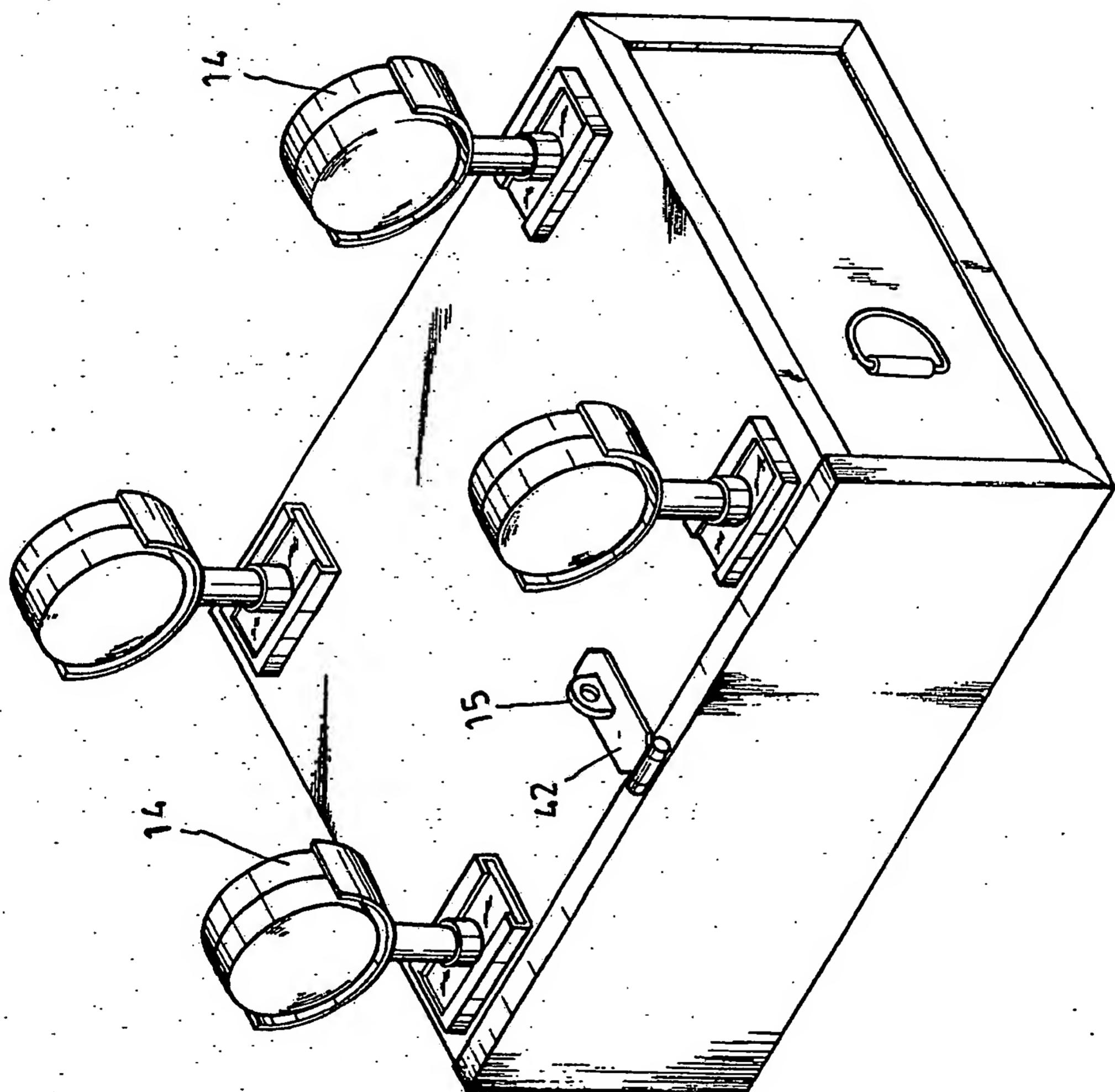


FIG. 5

MULTI-FUNCTIONAL FOLDABLE TOOL BOX/CARRIAGE/LOUNGE ASSEMBLY

This invention relates to Tool box, particularly a multi-functional foldable tool box, carriage and lounge assembly.

To people who are living in increasingly narrow space, all activities are limited by environment, and making efficient use of space in a limited space is relatively important in the current product development.

There are kinds of tool boxes in the market which are simply made of plates with only a single function. They are large, heavy and not convenient for carriage. They are not foldable either. Therefore, they can't satisfy requirements of the modern people.

The major objective of the present invention is to provide a multi-functional tool box that minimizes space requirement in using or storing. It is composed of a foldable case body and an inner box to contain tools and/or other articles therein. The case body can be folded to enclose the inner box to form a complete tool box.

Another objective of the present invention is to provide a lounge by spreading of the case body for performing service under chassis or low and narrow space.

Another objective of the present invention is to provide a tool box which can be used as chair or working chair as well.

Another objective of the present invention is to provide a tool box with castors to ease moving and operation with minimum effort.

Another objective of the present invention is to provide an inner box with a moveable top cover for holding of tools and

other articles.

An embodiment of this invention is described by way of example, with reference to the drawings in which :

5 Fig. 1 is a perspective view of a back of a lounge from spreading of a case body according to the present invention.

Fig. 2 is a perspective view of the lounge from spreading of the case body according to the present invention.

Fig. 3 is a perspective view of an inner box according to the present invention.

10 Fig. 4 is a partial sectional view of the assembly according to the present invention.

Fig. 5 is a perspective view illustrating the back of the assembly according to the present invention.

Referring to Fig. 1, a perspective view of the back of the present invention in the form of a lounge by spreading of a case body, the case body (1) is composed of a plurality of rigid plates (11). The plates (11) are connected in series by means of one or more angle steel (12) at each joint. It is for laying down for repair works behind a car. Each angle steel (12) has a length corresponding to the width of such plate (11) and is fixed to surface of the plate (11). The angle steel (12) has a lug (121) with a pin hole (122) at each end for connection by means of pins (123). In order to facilitate use of the lounge (2) according to the present invention, there is a T-slot (13) with a sealed end at each corner of the lounge (2) for installation of a castor (14). The T-slot (13) is covered by protection cover (17) to prevent from personal injury.

Please refer to Fig. 2, a perspective view of a lounge (2)

according to the present invention by spreading of a case body (1), the lounge (2) has a flat surface to make laying on it comfortable. Only a plate (12) at one side of the lounge (2) has a plurality of T-slots (13) as described above for formation of a case body (1).  
5 (please refer to Fig.4) , and an inner box (3) (please refer to Fig. 3) with castors (14) according to the present invention. There is a lock ring (15) between two T-slots (13) corresponding to a hasp (42) on a plate (11) to be used as a cover when the present invention is in the form of a box body (1), and there is a pillow (5)  
10 on the other end of the lounge (2) to make repair works comfortable.

Please refer to Fig.3 , a perspective view of an inner box according to the present invention. The inner box (3) is a hollow structure composed of a plurality of rigid plates. It is divided into two spaces by means of a plate (31) to ease sorting and placement of tools therein, to minimize rolling of tools therein, and to reinforce the box structure. On the lateral sides of the aforesaid inner box (3) there is a plurality of grooves (37) for containing of the angle steel (12) when it is connected to the case body (1) (please refer to Fig.4) , and to reinforce the inner box (3). On two opposite sides of the open end (32) of the said inner box (3) there are inner edges (33) to act as a sliding slot (34) for a sliding type cover plate (6) to slide thereon (please refer to Fig. 4). In order to ease carriage, on two other opposite sides of the inner box (3) there are moveable hooks (35) for connection of a belt (7) via fasteners (71). On the sides where these hooks (35) are located there are recessions (36) corresponding to dots (16) on the case body (1).

As shown in Fig. 4, a partial sectional view of an assembly

according to the present invention, the case body (1) is to enclose the inner box (3) to form a tool box according to the present invention. The dots (16) on the case body (1) are placed in the recessions (36) of the inner box (3) to secure them. A sliding cover plate (6) is placed on the open end (32) of the inner box (3). A puller (61) is designed on the cover plate (6) to move the cover plate (6) for opening/closing the left and right openings of the open end (32). After folding the case body (1) to form a tool box (4), the outermost plate (11) of the case body (1) is used as a cover (41) simultaneously. A hasp (42) is fixed to an edge of the cover (41) to lock the case body (1) with a lock ring (15) located on another plate (11).

Please refer to Fig. 5, a perspective view illustrating the back of an assembly according to the present invention. For placing the tool box (4) in store, the removable castors (14) can be easily installed on the T-slots (13) of the case body (1) and the tool box can be moved by pulling the belt (7) in order to save effort.

CLAIMS

1. A tool box assembly comprising :

5           a case body composed of a plurality of rigid plates connected in series by means of angle steel at each joint, incorporated with castors installed in T-slots protected by protection covers, convertible to a lounge for service under chassis by spreading of the plates;

10          an inner box in the form of a hollow body, with grooves in two opposite sides to contain the angle steel on the case body and to reinforce the box, a moveable cover with a puller for sliding the cover on the top of the box, and hooks at two opposite outer sides of for connection of a belt to ease carriage or pulling.